

Talisman

Reference Tower with AWS

Owner's Manual

Table of Contents:

Guarantee/Warranty	...2
Quick Start Guide	...4
Specifications	...5
Design Philosophy	...5
Adaptive Woofer System	...7
Using your Speakers	...9
Avoiding Damage	...10
Hookup	...11
Positioning the Talisman	...11
Break-In	...12
Troubleshooting	...13
Warranty Registration	...14



Audio Concepts, Inc.

901 South 4th Street, La Crosse, WI 54601 Phone: (608) 784-4570 Fax: (608) 784-6367
Website: www.audioc.com Email: service@audioc.com

All Rights Reserved 2003

Sound that Satisfies...

Audio Concepts, Inc. Our Guarantee and Warranty

Satisfaction Guaranteed:

We're sure you're going to love your new Audio Concepts, Inc. (ACI) products! In the unlikely event that you are not satisfied, please contact us within **30 days** of receipt of your ACI products for a hassle-free return.

Simply follow these procedures:

1. **Return Authorization:** Call us at (608) 784-4570 or email service@audioc.com, within 30 days of receipt of your ACI products for a return authorization number. Boldly mark the return authorization number on the outside of the box. Include a brief note stating your name, address and daytime telephone number, along with a short description why the products are being returned.
2. **Returning:** We request that you return the ACI products to us in their original packaging and include packaging materials, manuals, etc. Ship by the most economical means (preferably UPS) and insure the products for the invoice purchase price. The customer is responsible for return shipping. *Please note: ACI can not accept C.O.D. returns.*
3. **Credit:** Upon receipt and inspection, we will issue a refund for the invoice purchase price and invoiced UPS Ground service only. Please note this return policy is in effect only if the ACI products are in new condition, in their original packaging, without drilled holes, disassembled or any other modifications.

Speaker Manufacture's Warranty:

ACI's 5 Year Standard Warranty and 1 Year Total Assurance Guarantee

For **5 years** from receipt, Audio Concepts, Inc. will, at its option, repair or replace factory defective components. This warranty excludes products that have been abused, modified, or disassembled in any way. This warranty does not apply to products, which have been damaged in shipping. Audio Concepts, Inc. liability is limited only to the replacement of defective parts. No other liabilities or obligations are expressed or implied.

For the **1st year** of ownership, ACI also provides a unique Total Assurance Guarantee, (TAG). TAG from ACI not only covers everything included in our standard 5 year warranty, but we will also pay for shipping to ACI and back to your front door. TAG is limited to shipping destinations in the Continental U.S.

The ACI 5 Year Standard Warranty and 1 Year Total Assurance Guarantee are fully transferable from the original owner to a secondary owner provided that the original owner notifies ACI, by phone call or by filling out the on-line form: www.audioc.com/order/warranty_transfer.htm

No warranty will be transferred absent this notification.

Simply follow these procedures:

1. **Return Authorization:** Call us at (608) 784-4570 or email service@audioc.com for a return authorization number. If the warranty repair is during the first year of ownership, additional instructions will be given to you at that time. Boldly mark the return authorization number on the outside of the box. Include a brief note with your name, address and a daytime telephone number, along with a short description why the products are being returned.
2. **Returning:** Carefully repack defective ACI merchandise in their original packaging. Ship by the most economical means (preferably UPS) and insure the products for their full retail value. The customer is responsible for return shipping (unless the 1st year TAG applies). Please note: ACI can not accept COD or Freight Collect returns.
3. **Replacement:** Audio Concepts, Inc. will inspect and determine the cause of failure and will pay return shipping on the defective goods replaced or repaired.

Please ship any returns to the following address:

Audio Concepts, Inc., 901 So. 4th Street, La Crosse, WI 54601 (608) 784-4570

IMPORTANT NOTICE

All new speakers require a minimum of 60 hours break-in-time before they sound the way they are supposed to. A speaker's performance improves significantly once broken in. It is critical that you have at least 60 hours on your speakers before you evaluate them. Don't worry if your speakers do not sound perfect the first time you play them. This is normal until they are broken in. If you are having difficulty getting enough hours on your speakers and your 30 day return privilege is getting near, call us. We will work with you. Please give us the courtesy of breaking the speakers in before you determine they don't sound right.

Many of our customers break their speakers in by:

- A) Leaving them on at moderate listening levels when they are not home.
- B) Leaving them on at moderate listening levels while they sleep.
- C) Running pink noise through them.

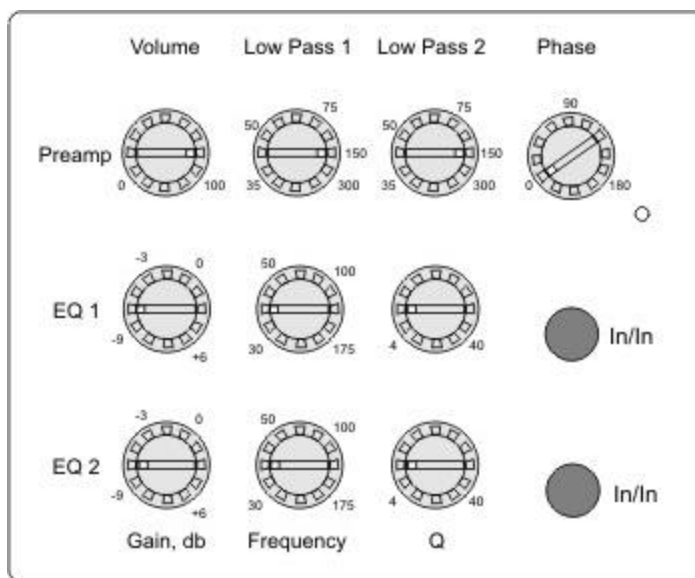
These methods are not convenient for everyone and we understand this. But please know that you are not giving yourself, your speakers or us a fair chance if you do not break them in before critical evaluation.

THANK YOU!

Talisman: Quick Setup Guide

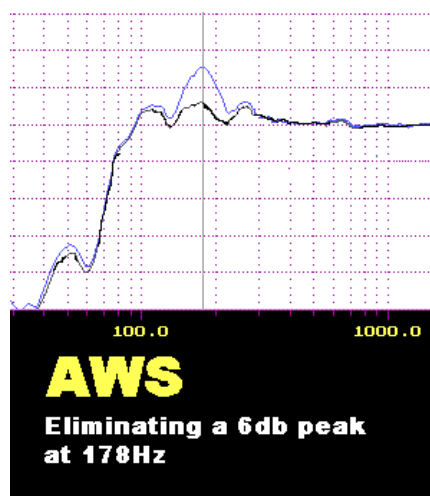
*Please take the time to read the complete owner's manual. Reading the manual will insure your complete satisfaction. For those of you who **must** get it running **now**:*

- The Talisman will not sound the best until it has 80-100 hours or more of running time.
- The Talisman has a powered woofer section. A power cord is supplied. A shorter or longer cord may be substituted as long as it is of equal or heavier wire gauge.
- The Talisman amplifier draws very little current at idle. It is best to leave it switched on all the time unless you will be away for an extended period.
- The Talisman has a ground lift switch on the rear panel. Depending on your household and system wiring, one of the two switch positions will yield the lowest noise level.
- The Talisman is shipped with the woofer preamp controls set for flattest anechoic response. The volume control setting is marked with a very small dot on the faceplate. Both lowpass filters should be set at 150Hz, and the phase should be at 0. See diagram.
- Most users will never want to change the lowpass or phase settings. Some users will want to adjust the volume control slightly. For example, placement near a wall might result in too much "warmth". In this case, adjust the volume control down slightly. In other systems, you may wish for a bit more "warmth". In this case, adjust the volume control up slightly.



The AWS System:

Shipping with your Talisman is a comprehensive manual on using the parametric functions of the AWS system. A CD with test tones and comprehensive instructions is also included.



Using the parametric EQ essentially involves four steps:

1. Locate the center frequency of the peak. This is most easily accomplished with an SPL meter and test disc or a computer based test system.* This can also be done "by ear" using test tones and very experienced listeners will be able to find the offending frequency listening to music.
2. Use the frequency control to center the control on the peak you want to eliminate or reduce
3. Use the Volume control to cut the level of the peak by the desired amount
4. Use the Q control to adjust the width of the desired cut.

**Parametric equalization works very well for reducing peaks in the frequency response. In general, parametric EQ is not very effective at filling in gaps caused by room acoustics. In other words, be very careful of using any boost. Boost is likely to be ineffective and potentially damaging to the system.*

**The least expensive means of instrument based measurement will be using a Radio Shack analog SPL meter and a CD recorded with test tones. If you use the Radio Shack meter be sure to use a correction chart to account for the basic inaccuracy of the device.*

The Talisman

Thank you for your order and congratulations on becoming the owner of an Audio Concepts, Inc. (ACI) speaker system. The Talisman is an audiophile quality system that will provide you with many years of listening pleasure. Be sure and take a moment to register your warranty either by mail or on-line at www.audioc.com.

ACI is all that you have grown to expect and demand. We are music lovers first. We only design and build speakers that we would desire to own ourselves. These principles comprise our foundation, and they always will. Now, ACI is achieving at a level beyond what we have aspired to before. The potential of Home Theater has inspired us to move further beyond convention and to rise above the status quo. The new Talisman is the ultimate example of this perspective. It is at once powerful yet flexible, elegant yet bold. Its internal woofer amplifier employs a fully discrete output stage and generates high current. The result is a speaker equally adept at recreating the visceral dynamics of home theater and the essential musical purity usually attained only by speaker that lack its ease of range. A parametric EQ allows unparalleled ability to adjust not only the speaker's balance, but to eliminate prominent room resonance as well.

As in all ACI products, the finest drivers are used with extensively engineered and tested precision crossover networks. The cabinets are built to be extremely inert with extensive internal bracing. The midrange chamber is specially shaped and damped. All design and quality aspects combine to yield absolute state-of-the-art sonics. The use of the finest lacquers and hardwoods results in a cabinet of exceptional beauty and durability.

Specifications

Frequency response: 30-20kHz ± 3 db

Nominal impedance: 8 ohms

Sensitivity: 87db 1 watt/1 meter

Bass-loading: Equalized, low Q, sealed alignment

Recommended RMS Power: 20-100 watts

Woofer Amplifier: 180 Watt RMS with AWS (Adaptive Woofer System)

Tweeter: 1" silk dome, ferro-fluid cooled, shielded

Mid: 5 1/4" cast-frame, rubber surround, double magnet, long-throw, shielded

Mid-Bass: 6 1/2" cast-frame, rubber surround, long throw, shielded

Woofer: 10" extreme excursion, rubber surround

Dimensions: 48 1/8" tall, 9 1/4" wide and 16 1/8" deep

Weight: 115lbs

Recommended accessories: DH Labs Speaker Cables

Design philosophy for the Talisman

Modern speaker design is a combination of science, art and sweat. A successful design such as the Talisman requires thousands of hours utilizing computer modeling, several generations of prototypes, precision testing, critical listening and many "fine tunings".

Our design goals for the Talisman were to produce a speaker that would set standards both for two-channel and multi-channel use. The Talisman had to be the ultimate tower for full-range response. The Talisman had to be an attractively proportioned and constructed speaker with smooth, uncolored, wide-range response, three-dimensional stereo imaging, good sensitivity, high power handling and dynamics, see through

transparency, and the ability to convey the "soul" of music. We also set a new goal that the Talisman must be user configurable to achieve optimum performance in their particular system and room placement, (AWS). We are pleased to have achieved and in some areas exceeded our goals by systematically engineering the Talisman to optimize performance. Please note the following factors:

Frequency Response:

For a speaker to be considered "accurate" it must have a smooth frequency response that is free of major dips, peaks, troughs or plateaus. The Talisman exhibits exceptionally flat response; $\pm 3\text{db}$ from 30Hz to 20KHz and better than $\pm 1.25\text{db}$ from 50Hz to 10kHz! The ultra-throw side-firing woofer combined with computer optimized equalization provides exceptional bass performance down to the cutoff frequency. The front-mounted mid-bass coupler provides exception detail and resolution in the critical upper bass range.

Of nearly equal importance is the off-axis response of the speaker. This response from 15 to 45 degrees off the axis of the speaker determines the smoothness of the early reflections from the wall surfaces. In video applications the off-axis response characteristics are extremely important for accurate voice and special effects reproduction. In most domestic listening situations this energy is nearly equal to the on-axis response in determining the balance of the system. The off-axis response should show a gradual decrease in output with increased frequency. The Talisman has an exceptionally well controlled and smooth off-axis dispersion pattern.

Tight quality control procedures are necessary to assure that *your* Talismans sound every bit as good as our lab samples. Incoming shipments of raw parts including cabinet materials, drivers and crossover components are subject to extensive testing to verify that they meet our exacting standards. For example, the industry standard for crossover component tolerance is usually 10%, sometimes as high as 20%. ACI's standard is tighter than .1%!

Dynamic range:

Dynamic range in a speaker requires;

- Adequate sensitivity so that it may be driven to realistic levels with available amplification. The C-weighted sensitivity for the Talisman is 87db.
- An easy load for the amplifier. A speaker can have a high sensitivity number but may present a difficult load for the driving amplifier. The impedance curve of the Talisman never drops below 7 ohms and is an easy load for any receiver or amplifier. Equally important, the Talisman woofer is self-powered up to 150Hz. This means your amplifier will only be asked to deliver power from 150Hz on up. This effectively doubles or even triples your available amplifier power!
- Low distortion drive units are necessary to keep the music from becoming edgy or gritty as the volume is turned up. The drive units used in the Talisman have very linear suspensions to reduce distortion components to inaudible levels and contribute to the excellent sense of "clarity". The crossover used keeps low frequencies out of the tweeter and protects it from over-excursion at resonance, which would otherwise cause increased distortion. The high-quality, fully shielded silk-dome tweeter by ScanSpeak of Denmark provides excellent damping, smooth crossover transition, and excellent power handling. The midrange driver actually can be used full range with good results. The unique mid-bass coupler helps the Talisman successfully achieve extreme dynamic peaks without compression by allowing a 300Hz crossover to the mid-range.

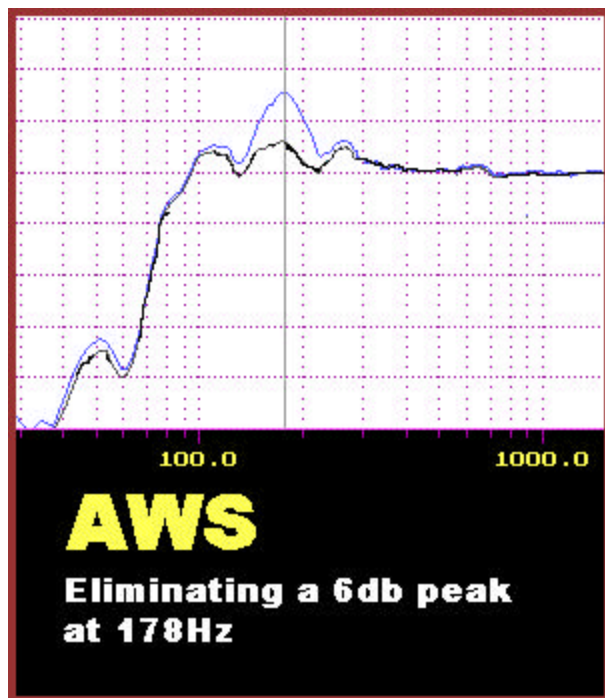
Delayed Resonance Control:

The ultimate control of delayed resonance required extensive use of Cumulative Spectral Decay analysis coupled with accelerometer testing of the cabinet wall surfaces. This extensive testing allowed us to develop the most cost-effective internal bracing to create the vault like solidity of the Talisman. The midrange driver and mid-bass coupler each have their own separate inner chamber that is used as a part of the cabinet bracing scheme. The entire cabinet is formed of an incredibly inert and well-damped medium density fiberboard (MDF) specified at 49.3 pounds per cubic foot density, with solid hardwood panels added over the MDF cabinet. Try to lift a Talisman and you'll be visiting the doctor. All drive units were designed with effective resonance control in mind.

Adaptive Woofer System (AWS)

Audiophiles have known for a long time that the listening room has a huge impact on the quality of sound they hear. Put a set of great speakers in a room that is all flat hard surfaces and it will sound unbearably bright and harsh. Luckily, most living spaces aren't totally hard and flat but some are close. We have furniture, cloth, carpets, rugs, curtains, bookshelves and even leafy plants that will absorb and disperse sound waves in a natural manner, in often unpredictable manner. If the midrange and treble response isn't what we want, there are lots of ways we can improve it. Curtains over glass, thick throw rugs on a hardwood floor, wall hangings, etc. can all be integrated into your décor and provide major improvements in midrange detail, treble smoothness, as well as soundstage size and image precision.

The bass frequencies are a different story. Here the wavelengths are extremely long and controlled by the room dimensions and the basic structure of the room walls, ceiling and floor. These factors are extremely difficult to control in most domestic living spaces. Because of the way we build houses, most of our rooms will have at least one or two strong resonant modes. These modes will cause extreme peaks in the bass response. The result is that certain bass notes will "boom" out unnaturally and the overall bass quality will lack precision and definition. Additionally, most rooms will suffer from dips or holes in the response. Dips in the response are usually far less irritating or obtrusive than peaks in the response. Our ears try to fill in for the dips. Careful speaker positioning can go a long way toward reducing the severity of both the peaks and dips. Unfortunately, the best position for most accurate bass response may be highly impractical and often is not the best place for stereo imaging or center speaker placement.



It always helps to try to optimally position the speakers. However, most of us have somewhat limited placement options. The center channel speaker usually must be placed under or over a screen or perhaps behind a perforated screen. Over the years, equalization has often been tried to "fix" the sound of speakers. Unfortunately, graphic equalizers aren't really suitable for tuning out narrow band peaks. Audiophiles have also been rightfully wary of inserting complex equalizers into the signal path. Such equalizers will always introduce coloration and distortion. The ACI solution is the Adaptive Woofer System, (AWS).

At the heart of AWS are two precision bands of parametric equalization. Each band has separate controls for corner center frequency, amount of cut or boost in decibels, (db), and width or Q of the cut or boost. Careful adjustment of these three controls can virtually eliminate the worst room peaks. Once you control the dominant peak(s) you will be amazed at the

clarity, definition, and punch of the midbass.

Why two bands of equalization? The vast majority of listening rooms have one or two dominant peaks in the bass response. Taming this peak(s) will make a vast improvement in the sound of your system. There will often be other minor peaks but they are far less of a problem and trying to tame too many peaks within a small frequency range can quickly become an exercise in futility. Each parametric band can be used independently, or they may be combined to eliminate a single, dominant peak.

There are additional benefits to the AWS system as well: First, because the lower octaves have built in amplification, your existing amplifiers will seem far more powerful. You will be able to reach extremely high

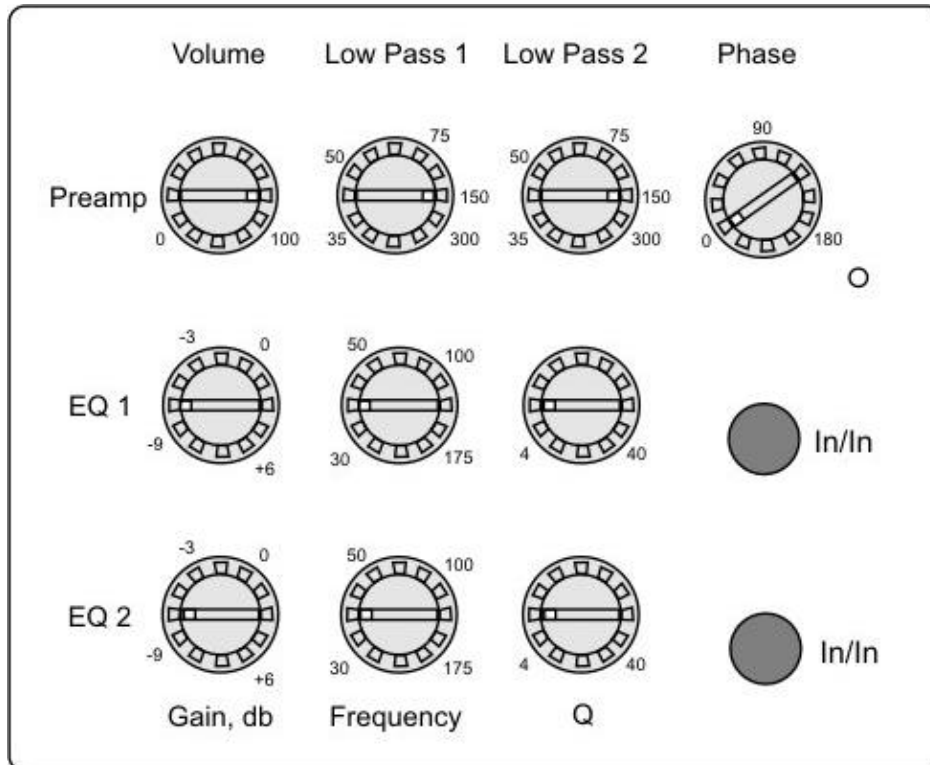
output levels with relatively modest wattage. Secondly, you will be able to easily "dial in" the perfect balance of the system. A speaker that sounds a bit too full and warm when placed flush in the wall may well sound too lean when stand mounted. The speaker that sounds perfect to your friend might be just a bit too lean for your taste. Your associated components may be very pleasing overall, but perhaps not as full sounding as you'd like. With the AWS the solution is as easy as a slight twist of the low-frequency section volume control.

The AWS is really all about control. You gain the ability to precisely control the sound of your speakers to most perfectly fit how you want them to sound. At the same time, the full capability and resolution of your system remain completely intact. There are simply no compromises with ACI's new AWS System. Take control!

Specifications for the AWS system:

- Rotary control for infinite adjustment of woofer level
- Rotary control for 30-300Hz adjustment of woofer cutoff frequency
- Rotary control for 0-180 degree adjustment of woofer phase
- Two separate bands of parametric equalization (EQ) for the woofer range. Either or both of these bands may be completely "switched out" of the circuit or switched in with the push of a button
- Each band of EQ has three controls:
 - Level -9db to +6db
 - Center Frequency 30-175Hz
 - Q from 4-40 (width of the boost or cut)

At the factory, all controls are set and marked for a normally "flat" or neutral response. You may actually find this response to be ideal for your room and system with no further adjustments required. A separate user's manual for the AWS details how to adjust the controls for the specific sonic changes you require. You can go back to the factory settings at any time.



We've attempted to show you some of the important design considerations that go into the Talisman system. To fully document the design process would require many hundreds of pages. We haven't even discussed the extremely high level of quality control that must be exercised in the drivers, crossovers and enclosure to

maintain the design standards. But the most important point is that the Talisman was designed by and for music lovers. You must hear the Talisman system reproduce your favorite music and or video soundtracks over a period of time to appreciate how fine these speakers are.

Using your speakers

Because of the size of the Talisman and its powered woofer section, there are several factors in setup that you should consider first.

- The Talisman connects to your system just like any other speaker. Gold-plated binding posts are mounted on the rear channel for connection to your receiver or amplifier.
- The Talisman is supplied with a standard power cord. You may substitute a longer or shorter cord of your choice as long as it has a conductor of at least the same thickness, (wire gauge).
- The power switch for the Talisman is on the rear amplifier panel. The Talisman amplifier draws very little power at idle and may be left on continuously. In fact, we recommend that the Talisman be left on rather than switched on and off.
- The Talisman has a ground lift switch on the rear panel. With the rest of the system turned on, but no source playing, experiment with this switch to determine which setting will result in the lowest hum or noise level.
- Like virtually all speakers, the Talisman will yield the ultimate imaging and resolution when located out into the room. In some setups this might not be possible. AWS allows the user to better balance the tonality if the Talisman must be placed near a wall. If installing the Talisman near a wall allow at least 2-3" behind the speaker for adequate air circulation around the amplifier heat sink.
- DO NOT install the Talisman in a position where the amplifier heat sink is in direct contact with any combustible material.

If the rest of your system does not work properly or is not correctly connected you will not get the best performance from your system. To eliminate problems we recommend the following:

1. Use the finest associated components you can afford. Turntables, cartridges, pre-amps, amplifiers (receivers), CD players, DVD players, SACD players and cables all have profound impact on the sound of your system. Accurate speakers let more detail through. You will hear more of the beauty of the music, but flaws in your system and or source material may be more obvious.

Any good audio system is made up of matched components. You wouldn't use bargain recap tires on a new Porsche, and you shouldn't use inferior components with a high quality speaker. Your Talismans perform like speakers costing two to four times their price. Keep this in mind when selecting the rest of your system. Your Talismans will work in systems with as little as 20 watts per channel. For maximum resolution and dynamic range we recommend high-quality amplification of 50 - 200 watts per channel.

2. Know your source material. People often blame their audio gear for poor recordings. A great number of popular recordings are of inferior sound quality. Unfortunately this applies to records, tapes, laser discs, DVDs and CDs. Commonly poor recordings are rolled off in the low bass, and harsh and constricted in the mids and highs. Good stereo image is rare. Many recordings are still done on 40-year-old studio monitor speakers that are grossly inaccurate. Consider that some producers still mix recordings to sound best on cheap table and car radios! This doesn't mean you can't enjoy these recordings, but you should try a few of the best audiophile recordings just to see how terrific your system can be when fed a good signal.

3. Work at getting the best placement of your speakers in their environment. It is not unusual to be able to get a 25 to 50 percent improvement in sound by careful placement of speakers and furniture. It may not be practical to go all out, but the more you can "tune" your room, the better your system will sound. Refer to the section on placement and room treatment.

Avoiding Damage

Audio Concepts, Inc. speakers are designed for the purpose of accurate reproduction of music in the home. We do our best to make our speakers rugged and reliable. However, ANY speaker or system may be damaged under certain conditions:

- Excessive power, particularly at certain frequencies or for prolonged periods of time.
- Excessive distortion often caused by under-powered amplifiers or receivers.
- Defective amplification.
- Excessive subsonic energy.

Our systems are tested at high volume levels with a variety of amplifiers and receivers before a design is approved. With many years of testing, we know it is virtually impossible to damage a component without the system first giving audible warning in the form of distortion. We also know that true factory defects are extremely rare, less than one in 10,000 drivers. Here are some considerations to keep in mind to avoid damaging your drivers:

1. Even though a system may be rated for 100 watts or more it is very easy to damage it with a low power receiver. When an amplifier runs out of power, it "clips". This clipping produces large amounts of distortion that sends excessive energy particularly to the midrange and tweeter. This clipping distortion accounts for more than 80% of all tweeter failures. How do you know if the amplifier is clipping? Volume knob placement does NOT indicate much. Some receivers reach full output well before 12:00 on the dial. Use of the loudness button, bass boost and treble boost can all drive the receiver and then the speaker into distortion at fairly low levels.
2. Many of today's recordings including CDs and DVDs contain extremely powerful low bass. This low bass can easily drive woofers into over-excursion or cause the amplifier to run out of power and clip, causing tweeter or midrange damage.
3. Our systems are designed for accurate sound. Our rate of damage or failure is extremely low. We could make the systems even more rugged if we were to compromise sound quality. Moving the crossover points upward would protect midrange and tweeters better while causing a loss of detail, clarity and imaging. The Talisman could have been designed to more rapidly roll-off the low bass which would protect the woofers but this would lessen the low bass response and clarity. Protection devices could be added in the crossovers, which would shut the system down when damaging power or distortion was present but every one of these devices audibly degrades the sound!

You can protect your speakers by following a couple of very simple guidelines:

- If it sounds at all distorted, turn it down. Distortion is a warning sign that should not be ignored.
- Use tone controls and or the AWS with caution. Do not use AWS to attempt to significantly boost low frequencies. This can cause system damage. *IF* you must use equalizers, monitor the system carefully.
- Beware the party damage epidemic. Speakers are more often damaged during parties. All those bodies soak up sound, requiring more output to sound as loud, bass and treble controls are sometimes cranked up and nobody is listening for distortion!
- Watch out for energy put out by the amplifier in the range below 20Hz, which is not music. Examples include record warps, DC current and subsonic noise in the recording. These signals can take up a lot of amplifier power which means the amplifier runs out of steam very early. These signals can also overload a speaker even though you can't hear them. If you have ever watched a cone "flap" you know just what we mean.
- Vented speakers are particularly sensitive to signals below their F3 point. The average vented box that can handle 100 watts at 50Hz may handle less than 5-10 watts below 25Hz! Sealed box speakers with low Qts. numbers have a similar characteristic although not as severe. Low organ or synthesizer notes may cause an otherwise excellent woofer to bottom out at relatively low input levels.
- Keep an eye out for excessive cone movement that is not producing music. Find the source of the problem and eliminate it, play at low levels, or use a subsonic filter (usually in your pre-amp) which will filter out energy below 20Hz. However, use of a subsonic filter may take away from the naturalness of bass sounds. We don't recommend it for extremely critical listening.
- In over twenty-five years of daily evaluation of all types of speakers on everything from 10 to 1000 watts and with all kinds of music, we have never damaged a driver without first hearing audible distortion. If it sounds bad, turn it down and you will never damage a speaker.

Hookup

Your speakers are furnished with high quality five-way type binding posts. You may choose to utilize spade lugs, banana jacks, pins, or bare wire. It is important that the positive and negative leads do not touch. If you use bare leads, be sure to twist them tightly and insert through holes in such a manner that they do not fray or short out against each other. Good connections are important, so make sure any ends are tightly crimped and preferably soldered to the wire ends. Speaker wires should be kept as short as possible, (long wires add excessive resistance and color the sound.) The use of quality wire is recommended. Audio Concepts, Inc. stocks and recommends DH-Labs cables. Make sure you hookup the speakers in the correct polarity. The red (positive) terminal on your amp should hook up to the red binding post, and the black (negative) terminal should be connected to the black binding post. Keep this the same for both speakers in a stereo pair, and all three front speakers in a home-theater setup. A way to check the correct polarity is to play music with a lot of bass. The correct hookup will yield the greatest amount of bass.

Positioning your Talisman

Placing the speakers in your room

As mentioned, the proper placement of speakers in your room will easily improve the sound. Because all of our rooms and tastes are different, it is impossible to specify a "correct" placement. Instead, let us present you with some acoustical facts, then you can optimize placement in your room.

It helps to visualize sound waves as behaving very much like water waves. The sound we hear is made up of two types of waves. Direct sound waves come right from the speaker and are not changed in any way. Reflected waves come to us after bouncing (diffracting) off the speaker enclosure itself, or walls, ceiling, floor or furniture. If you want to see how much these reflected waves affect the sound, move your speakers outside and hear the difference.

Sound waves come in different lengths; the lower the note, the longer the wave. Extreme low frequencies such as the lowest organ pedal notes are over 60 feet long! If your room is not big enough, the wave can't develop fully. But the biggest problem with bass notes is the phenomenon we call standing waves. In effect the waves more or less "pile up". This creates big peaks and dips in the bass response. If you put a certain frequency through the speakers, you can usually walk around the room and find places where it is very loud, and places where you perceive virtually nothing.

Just as the room affects the bass response, so it affects the mid-treble sound of the system. In the mid-treble range, the sound waves are shorter and have peaks and dips, most of the affects (peaks and dips) occur from enclosure edges, furniture, walls, or the floor. The Talismans present the deepest image when placed away from walls and furniture. The shorter wavelengths of the mids and highs are more easily absorbed than the longer wavelengths of low frequencies. This is why a bare room sounds so harsh compared to a room with a lot of stuffed furniture, carpets, drapes, etc.

An ideal setup for sound would be achieved if you could:

- Choose a room with width, height and length dimensions that are not multiples of each other. (A cube would be the worst!) Good numbers might be something like, height = 8 feet, width = 15 feet, and length = 26 feet.
- Choose a room that has an irregular shape, non-parallel walls cut down on standing waves.
- Place the speakers so that the woofer cones are at irregular distances to the floor, walls and ceiling. This can be difficult. Use a tape to measure the distance from the center of the woofer to the room boundaries. Move the woofers around till you have cut down on the number of related distances. (You don't want distances like 12 and 24", but more like 12 and 22"). Use the distance from the woofer to the boundaries to increase or decrease bass output. Sticking the speaker in the corner or close to walls will give more bass output than putting the speaker out into the room. You can use this to get the best balance between bass output and upper range output.

- In most rooms we find that the Talismans perform their best with the woofers firing out. However, in rooms where the Talisman may have to be placed too near a corner, the woofers will usually perform better firing toward each other. We recommend trying both options to find what gives the most balanced response in your room.
- Use absorbent materials to help smooth upper-range response and improve transient response and clarity. Why? Let's take the sound of a bell for example. First you will hear the direct sound from the speaker. But some of that sound bounces from wall-to-wall, ceiling-to-floor, off furniture, etc. before it reaches your ears milliseconds later. Because the time difference is short, you don't hear an echo, but the sound of the bell is stretched out from something like a "ding" to a "ddiinngg". Some speaker engineers have begun to realize this and are addressing the problem in their latest designs. This is why we are now seeing very directional designs. This controlled directionality increases the amount of direct sound in proportion to reflected sound.
- Use padded furniture and drapery when possible to cut down on reflections. Furniture has the added bonus of helping to break up standing wave patterns in the bass.
- Use a symmetrical placement of the speakers in the room. Of course the distance between the speakers is also important. In general, the further back your listening position, the farther apart should be your speakers.
- In most rooms, you will want left and right Talisman speakers to be placed between five and eight feet apart. Experiment! Too much distance will smear the image and it will seem like there is a hole in the middle. Too small a distance will compress the image. Experiment with facing the speakers straight into the room or toed in toward the listener. If your sitting area is relatively far back from the Talismans they may actually perform their best when toed in so that they "cross" in front of your listening position. For video applications the left and right speakers should be close to the edges of the screen.

Speaker Break-in *Important!!!***

Allow at least 60 to 80 hours of playing time before your new ACI speakers will sound their best. The adhesives and materials used in manufacturing must stretch and flex properly before a speaker will sound its best. After break-in the bass will be tighter and go lower, imaging and transparency will improve and the midrange and highs will sound smoother and more natural.

Suggestions for quicker break-in:

- Play the Talisman at medium volume while away from home. A CD player on repeat or FM radio works fine.
- Place a pair of Talisman grill-to-grill and reverse the polarity on ONE of the speakers. Wiring them out-of-phase like this will cancel much of the sound and allow you to break them in when the sound would otherwise be obtrusive.

Using the AWS

Use of the AWS system is covered in a separate manual titled: AWS Setup.

Troubleshooting

Occasionally we get a call from someone who feels there is a problem with his or her ACI speaker. At least a couple of times a year we will get a call or email that goes something like this: "Speaker not working properly, can't get enough sound even with the volume turned way up." The problem may be different, but with this little information to go on it is almost impossible to trouble shoot the problem "long distance".

The following checklist may help:

- 1) Are all system hookups properly connected, not partial shorted wires, or reversed connections, etc?
- 2) Did you try the rest of your system with other speakers to determine if the problem exists with the speakers?

IF for any reason you aren't satisfied with the sound you're getting from your speakers we want to know about it. Make sure the speakers have had adequate break-in time. Before you call, write or email please try to narrow down the problem and eliminate other factors. If you contact us we will need to know:

- The size of your room
- Where you have the speakers placed
- What other equipment is in your system
- Have you tried other speakers (which ones, and did they eliminate the problem)
- Any other specific symptoms or information you can provide

Our Customers are #1 with us, and we want you to be completely happy with your ACI speakers!

The Company

Audio Concepts, Inc. (ACI), has been satisfying discerning music lovers since 1977. Our goal has and always will be to provide exceptional product and service to music enthusiasts around the world. Audio Concepts speakers are an expression of dedication to our customers and their desire for accurate musical reproduction. We believe you must audition speakers in your own home and in your own system. Please see the warranty statement for details.

After listening, please fill out and return the warranty registration. This warranty registration is important. It allows us to reach you in the event of future upgrades. The comments you make on the warranty help us to continually improve our products and customer service. Thank you!

Specifications and design are subject to change without notice due to our continuous research and development program.

Handcrafted with pride in the U.S.A.

Audio Concepts, Inc.

901 South 4th Street
La Crosse, WI 54601

Phone: (608) 784-4570 Fax: (608) 784-6367

E-Mail: service@audioc.com URL: <http://www.audioc.com>

All rights reserved Audio Concepts, Inc. 2003 Rev. 01/03

Warranty Registration, Please Return

ACI div. Audio Concepts, Inc.

901 S. 4th Street, La Crosse, WI 54601

service@audioc.com (608) 784-4570

Congratulations on becoming an ACI speaker owner. Completing this registration enables us to contact you regarding future upgrades. Your information helps us provide the best possible products and service. If you need additional room please continue on the back. You may also register your product electronically at our web site. <http://www.audioc.com>

Name: _____

Address: _____

Main reasons you purchased from ACI: _____

Where did you first hear about ACI: _____

System(s) purchased: _____

Date received: _____ Invoice Number: _____

Condition received in: _____

Comments or suggestions regarding our staff or service: _____

Other audio equipment used: _____

Do you have a home-theater system? _____

Do you plan to purchase other speakers within the next two years? ____ If so, what types of speakers are you interested in purchasing, (Tower speakers, satellite speakers, subwoofers, wall speakers, outdoor speakers, home-theater speakers, etc.) _____

All speakers require at least 60-80 hours of playing time to sound their best. After your speakers have had time to break-in and you've done some serious listening please tell us:

Features you like most about your ACI speakers: _____

Areas of performance or appearance you'd like to change: _____

Other comments or suggestions: _____

Will you recommend us to others? _____ (Over 1/2 of our customers were recommended to us by testimonials on computer data bases or referrals from someone they know. We put the money we save on advertising into the highest quality products at the lowest possible cost to you.) We would appreciate being able to use your comments in future advertising. Please sign here to allow us that privilege.

Name: _____

Date: _____

Thank you for taking the time to complete and return this registration!